

In the claims:

For the convenience of the Examiner, all claims being examined, whether or not amended, are presented below.

1. **(Reiterated)** A method of therapy for a mammal at risk of, or afflicted with, loss of or damage to myocardium, the method comprising implanting a preparation of myogenic precursor cells into said mammal at a site at risk of, or afflicted with, loss of or damage to myocardium, and treating said myogenic precursor cells with an amount of a morphogen sufficient to promote proliferation or differentiation of said myogenic precursor cells into functional myocardium.
5. **(Reiterated)** The method of claim 1, wherein said myogenic precursor cells are: mammalian skeletal muscle satellite cells, embryonic myogenic precursor cells, or cells of a histocompatible mammalian myogenic precursor cell line.
6. **(Reiterated)** The method of claim 1, wherein said myogenic precursor cells are autologous skeletal muscle satellite cells.
7. **(Reiterated)** The method of claim 1, wherein said mammal is afflicted with a condition selected from: myocardial infarction or congestive heart failure.
8. **(Reiterated)** The method of claim 1, wherein treating said myogenic precursor cells is conducted prior to implanting said preparation of myogenic precursor cells into said mammal.
9. **(Reiterated)** The method of claim 1, wherein treating said myogenic precursor cells is conducted simultaneously with implanting said preparation of myogenic precursor cells into said mammal.
10. **(Reiterated)** The method of claim 1, wherein treating said myogenic precursor cells is conducted subsequent to implanting said preparation of myogenic precursor cells into said mammal.

11. **(Reiterated)** The method of claim 10, wherein treating said myogenic precursor cells is conducted at least once a week for a period of at least four weeks.
12. **(Reiterated)** The method of claim 10, wherein treating said myogenic precursor cells is conducted at least once a month for a period of at least one year.
13. **(Reiterated)** The method of claim 1, wherein treating said myogenic precursor cells is conducted with morphogen at a concentration of about 0.01 - 1000 ng/ml.
14. **(Reiterated)** The method of claim 1, wherein treating said myogenic precursor cells is conducted with morphogen at a concentration of about 0.1 - 100 ng/ml.
15. **(Reiterated)** A method of promoting proliferation of myogenic precursor cells or differentiation of myogenic precursor cells into functional myocardium, comprising: (a) contacting said cells with a morphogen in an amount effective to induce said proliferation or differentiation; and (b) maintaining said cells in a morphogenically permissive environment.
16. **(Reiterated)** The method of claim 1, wherein said morphogen is: a pro-form of a morphogen, a soluble form of a morphogen, a mature morphogen, or a C-terminal fragment of a morphogen comprising at least the seven cysteine domain of said morphogen.
17. **(Reiterated)** The method of claim 1, wherein said morphogen is osteogenic proteins or bone morphogenic proteins.
18. **(Reiterated)** The method of claim 1, wherein said morphogen induces a cascade of tissue-specific morphogenesis culminating in the formation of functional mammalian myocardium; and comprises a pair of folded polypeptides, the amino acid sequence of each of which comprises a sequence having at least 70% amino acid sequence homology with the C-terminal seven-cysteine domain of human OP-1, mouse OP-1, human OP-2 or mouse OP-2, residues 38-139 of SEQ ID NOs. 5, 6, 7 or 8, respectively.
19. **(Reiterated)** The method of claim 1, wherein said morphogen is OP- 1, CBMP-2A (BMP-2), or CBMP-2B (BMP-4).

20. **(Reiterated)** A therapeutic composition for promoting the repair or regeneration of mammalian myocardium comprising isolated mammalian myogenic precursor cells, and an amount of a morphogen sufficient to promote proliferation or differentiation of said myogenic precursor cells into functional myocardium in a morphogenically permissive environment.
24. **(Reiterated)** A method of culturing mammalian myogenic precursor cells, comprising isolating said myogenic precursor cells, and culturing said myogenic precursor cells in a medium comprising an amount of a morphogen sufficient to promote proliferation or differentiation of said myogenic precursor cells into functional myocardium in a morphogenically permissive environment.
28. **(Reiterated)** A method of inducing myogenic precursor cells, naturally competent to differentiate into skeletal or smooth muscle, to differentiate into cardio myocytes, said method comprising: (a) contacting said myogenic precursor cells with a morphogen; and (b) maintaining the product of (a) in an environment morphogenically permissive for cardiomyogenesis.
29. **(Reiterated)** A method of producing replacement cardiomyocytes in a mammal in need thereof, said method comprising implanting into said mammal myogenic precursor cells induced by the method of claim 28.

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Pending claims 1, 5-20, 24, 28, 29

(**Reiterated**) A method of therapy for a mammal at risk of, or afflicted with, loss of or damage to myocardium, the method comprising ~~implanting~~ ^{implanting} a preparation of myogenic precursor cells into said mammal at a site at risk of, or afflicted with, loss of or damage to myocardium, and ~~treating~~ ^{treating} said myogenic precursor cells with an amount of a morphogen sufficient to promote proliferation or differentiation of said myogenic precursor cells into functional myocardium. //

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5. (**Amended**) ~~A~~ The method ~~as in any one~~ of claims 1-4, wherein said myogenic precursor cells are: ~~selected from the group consisting of~~ mammalian skeletal muscle satellite cells, embryonic myogenic precursor cells, and or cells of a histocompatible mammalian myogenic precursor cell line.
6. (**Amended**) ~~A~~ The method ~~as in any one~~ of claims 1-4, wherein said myogenic precursor cells are autologous skeletal muscle satellite cells.
7. (**Amended**) ~~A~~ The method ~~as in any one~~ of claims 1-4, wherein said mammal is afflicted with a condition selected from: ~~the group consisting of~~ myocardial infarction and or congestive heart failure.
8. (**Amended**) ~~A~~ The method ~~as in any one~~ of claims 1-4, wherein ~~said treatment step~~ treating said myogenic precursor cells is conducted prior to ~~said implantation step~~ implanting said preparation of myogenic precursor cells into said mammal.
9. (**Amended**) ~~A~~ The method ~~as in any one~~ of claims 1-4, wherein ~~said treatment step~~ treating said myogenic precursor cells is conducted simultaneously with ~~said implantation step~~ implanting said preparation of myogenic precursor cells into said mammal.

10. (Amended) ~~A~~ The method ~~as in any one~~ of claims 1-4, wherein ~~said treatment step~~ treating said myogenic precursor cells is conducted subsequent to ~~said implantation step~~ implanting said preparation of myogenic precursor cells into said mammal.
11. (Amended) ~~A~~ The method ~~as in~~ of claim 10, wherein ~~said treatment step~~ treating said myogenic precursor cells is conducted at least once a week for a period of at least four weeks.
12. (Amended) ~~A~~ The method ~~as in~~ of claim 10, wherein ~~said treatment step~~ treating said myogenic precursor cells is conducted at least once a month for a period of at least one year.
13. (Amended) ~~A~~ The method ~~as in~~ of claim 1, wherein ~~said morphogen treatment step~~ treating said myogenic precursor cells is conducted with morphogen at a concentration of about 0.01 - 1000 ng/ml.
14. (Amended) ~~A~~ The method ~~as in~~ of claim 1, wherein ~~said morphogen treatment step~~ treating said myogenic precursor cells is conducted with morphogen at a concentration of about 0.1 - 100 ng/ml.
15. (Amended) A method of promoting proliferation of myogenic precursor cells or differentiation of myogenic precursor cells into functional myocardium, comprising: ~~the steps of~~ (a) contacting said cells with a morphogen in an amount effective to induce said proliferation or differentiation; and (b) maintaining said cells in a morphogenically permissive environment.
16. (Amended) ~~A~~ The method ~~as in~~ of claim 1, wherein said morphogen is: ~~selected from the group consisting of~~ a pro-form of a morphogen, a soluble form of a morphogen, a mature morphogen, ~~and or~~ a C-terminal fragment of a morphogen comprising at least the seven cysteine domain of said morphogen.
17. (Amended) ~~A~~ The method ~~as in~~ of claim 1, wherein said morphogen is ~~selected from the group consisting of~~ osteogenic proteins ~~and or~~ bone morphogenic proteins.

(Amended) ~~A~~ The method ~~as in~~ of claim 1, wherein said morphogen induces a cascade of tissue-specific morphogenesis culminating in the formation of functional mammalian myocardium; and comprises a pair of folded polypeptides, the amino acid sequence of each of which comprises a sequence having at least 70% amino acid sequence homology with the C-terminal seven-cysteine domain of human OP-1, mouse OP-1, human OP-2 or mouse OP-2, residues 38-139 of SEQ ID NOs. 5, 6, 7 or 8, respectively.

19. **(Amended)** ~~A~~ The method ~~as in~~ of claim 1, wherein said morphogen is ~~selected from the group consisting of~~ OP- 1, CBMP-2A (BMP-2), ~~and~~ or CBMP-2B (BMP-4).

20. **(Reiterated)** A therapeutic composition for promoting the repair or regeneration of mammalian myocardium comprising isolated mammalian myogenic precursor cells, and an amount of a morphogen sufficient to promote proliferation or differentiation of said myogenic precursor cells into functional myocardium in a morphogenically permissive environment.

24. **(Amended)** A method of culturing mammalian myogenic precursor cells, comprising isolating said myogenic precursor cells, and culturing said myogenic precursor cells in a medium comprising an amount of a morphogen sufficient to promote proliferation or differentiation of said myogenic precursor cells into functional myocardium in a morphogenically permissive environment.

28. **(Amended)** A method of inducing myogenic precursor cells, naturally competent to differentiate into skeletal or smooth muscle, to differentiate into cardio myocytes, said method comprising: ~~the steps of~~ (a) contacting said myogenic precursor cells with a morphogen; and (b) maintaining the product of (a) in an environment morphogenically permissive for cardiomyogenesis.

29. **(Amended)** A method of producing replacement cardiomyocytes in a mammal in need thereof, said method comprising ~~the step of~~ implanting into said mammal myogenic precursor cells induced by the method of claim 28.